UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,386	01/11/2002	Melvin D. Frerking	08648.0001	8941

33190 7590 11/15/2005

CINGULAR WIRELESS LLC
5565 GLENRIDGE CONN:, #1725A
C/O LINDA GILES, PATENT MANAGER
ATLANTA, GA 30342

EXAMINER	
NG, CHRISTINE Y	

ART UNIT	PAPER NUMBER
2663	

DATE MAILED: 11/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/044,386	FRERKING ET AL.	
	Examiner	Art Unit	
	Christine Ng	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 January 2002*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-52* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,10-14,20-25,29-32,38-43 and 49* is/are rejected.

7)☒ Claim(s) *5-9,15-19,26-28,33-37,44-48 and 50-52* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *11 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 32 is objected to because of the following informalities:

In line 1, "32" should be changed to --31--.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 12, 22, 30 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,320,851 to Kim et al.

Referring to claims 1 and 40, Struhsaker discloses in Figure 2 a base station (Column 4, lines 21-24) for providing flexible data rate transmission in a telecommunications system comprising:

An interface (coder 32) operable to receive an incoming data stream (data bitstream 11). Refer to Column 4, lines 33-44.

A signal processor (mapper 34 and code multiplier unit 36) coupled to the interface, the signal processor operable to:

Receive the incoming data stream (coded data bitstream 13) from the interface. Refer to Column 4, lines 41-44.

Select a chip rate (2.56 Msymbols/s).

Select a spreading factor (16).

Spread the incoming data stream into a spread data stream with a channelization Code (Walsh code). The signals 15,17 at 160 ksymbols/s are "spread by a factor of sixteen using a respective Walsh pseudo-random noise (PN) code spreading function to generate baseband signals at an effective chip rate of 2.56 Msymbols/s...". The initial data rate R_0 is equal to the chip rate R_1 divided by a spreading factor SPREAD: $R_0 = R_1/(N \times SPREAD)$. Refer to Column 5, lines 24-63.

A transmitter (transmitting antenna 50) coupled to the signal processor, the transmitter operable to receive the spread data stream from the signal processor and transmit the spread data stream over an air interface. Refer to Column 6, lines 62-67.

Struhsaker does not disclose the step of select an operating downlink chip rate from at least two chip rates.

Kim et al disclose that a base station sets up a call with a mobile station and negotiates forward channel link chip rates. The base station requests a desired forward channel link chip rate from the mobile station, the mobile station then transmits the maximum forward channel link chip rate to the base station, and then the base station transmits a revised forward channel link chip rate to the mobile station. Forward communication then begins using the revised forward channel link chip rate. The revised forward channel link chip rate is chosen from two chip rates: the basic chip rate or the maximum forward channel link chip rate. Refer to Column 3, lines 11-26. Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to include the step of select an operating downlink chip rate from at least two chip rates; the motivation being so that the base station and mobile station can choose asymmetric forward and reverse chip rates during negotiate, thereby allowing increased flexibility and the ability to accommodate asymmetric high speed data services. Refer to Column 3, lines 41-46.

Referring to claims 12 and 30, refer to the rejection of claims 1 and 40 or claim 22, since the chip rate can be either a downlink chip rate or an uplink chip rate.

Referring to claim 22, refer to the rejection of claims 1 and 40. The transmitter 30 shown in Figure 2 by Struhsaker can be placed in a user equipment (Column 4, lines 21-24). Furthermore, the method disclosed by Kim et al can apply to a user equipment (mobile station) selecting an uplink chip rate (reverse channel link chip rate) from at least two chip rates (basic chip rate or maximum reverse channel link chip rate). Refer to Column 3, line 62 to Column 4, line 10.

4. Claims 2, 23 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,320,851 to Kim et al in view of U.S. Patent No. 6,173,006 to Kent et al, and in further view of U.S. Patent No. 6,697,629 to Grilli et al.

Struhsaker and Kim et al do not disclose that the at least two chip rates are 3.84 Mchips/second and 3.84 x (n/p) Mchips/second, where n/p is selected from ½, 2/5, 1/3, ¼, and 1/5.

Kent et al disclose a scalable CDMA system which supports multiple chips rates including chip rates of 1.2288 MHz (1X), 3.6864 MHz (3X), 7.3728 MHz (6X), etc, with

1.2288 MHz being the basic chip rate and also the rate at which the system encodes and spreads signals. The system operates at a chip rate that is a multiple of the basic chip rate, with the multiple being 3, 6, 9 or 12. An increase in the chip rate allows for higher data capacities and more efficient communications. The system can choose from a chip rate of 3.6864 MHz, or 1/3 of 3.6864 MHz (1.2288 MHz). Refer to Column 1, lines 53-57; Column 3, lines 11-48; Column 5, lines 32-63; and Column 10, lines 18-55. Kent et al disclose that the first chip rate is 3.6864 MHz, not 3.84 Mchips/sec. However, Grilli et al disclose that 3.84 Mchips/sec is a basic chip rate for WCDMA systems. Refer to Column 5, lines 41-64 and Column 13, lines 35-51. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the at least two chip rates are 3.84 Mchips/second and 3.84 x (n/p) Mchips/second, where n/p is selected from ½, 2/5, 1/3, ¼, and 1/5. One would be motivated to do so in order to for the system to choose a higher chip rate to in case it needs to support higher data capacities, or a lower chip rate to save resources.

5. Claims 3, 13, 24, 31 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,320,851 to Kim et al, and in further view of U.S. Publication No. 2003/0031147 to Zeira et al.

Struhsaker and Kim et al do not disclose that the signal processor is further operable to segment the incoming data stream into one or more frames, each frame comprising one of more slots.

Zeira et al disclose that in a CDMA system, the spectrum is divided into repeating frames having a plurality of time slots, fifteen. Users are assigned selected time slots to communicate information distinguished by different codes. User information is transmitted in a single time slot using a single code with a spreading factor. Refer to Section 0004. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the signal processor is further operable to segment the incoming data stream into one or more frames, each frame comprising one of more slots; the motivation being that in CDMA systems, the spectrum is divided into repeating frames having fifteen time slots.

6. Claims 4, 11, 14, 21, 25, 29, 32, 39 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,320,851 to Kim et al, and in further view of U.S. Patent No. 6,173,006 to Kent et al.

Referring to claims 4, 14, 32 and 43, Struhsaker and Kim et al do not disclose selecting the operating downlink chip rate from the at least two chip rates, wherein the first of the two chip rates is equal to a fraction, n/p, of the second of the chip rates, where n/p is selected from ½, 2/5, 1/3, ¼, and 1/5.

Kent et al disclose a scalable CDMA system which supports multiple chips rates including chip rates of 1.2288 MHz (1X), 3.6864 MHz (3X), 7.3728 MHz (6X), etc, with 1.2288 MHz being the basic chip rate and also the rate at which the system encodes and spreads signals. The system operates at a chip rate that is a multiple of the basic chip rate, with the multiple being 3, 6, 9 or 12. An increase in the chip rate allows for

higher data capacities and more efficient communications. The system can choose from a chip rate of 3.6864 MHz, or 1/3 of 3.6864 MHz (1.2288 MHz). Refer to Column 1, lines 53-57; Column 3, lines 11-48; Column 5, lines 32-63; and Column 10, lines 18-55. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include selecting the operating downlink chip rate from the at least two chip rates, wherein the first of the two chip rates is equal to a fraction, n/p, of the second of the chip rates, where n/p is selected from ½, 2/5, 1/3, ¼, and 1/5. One would be motivated to do so in order to for the system to choose a higher chip rate to in case it needs to support higher data capacities, or a lower chip rate to save resources.

Referring to claims 11, 21, 29 and 39, Struhsaker and Kim et al do not disclose a receiver coupled to the signal processor, the receiver operable to receive a second spread data stream from the air interface which has been transmitted at an operating uplink chip rate selected from one of the at least two chip rates, wherein the first of the chip rates is equal to a fraction, n/p, of the second of the chip rates, where n/p is selected from ½, 2/5, 1/3, ¼, and 1/5.

Kent et al disclose a scalable CDMA system which supports multiple chips rates including chip rates of 1.2288 MHz (1X), 3.6864 MHz (3X), 7.3728 MHz (6X), etc, with 1.2288 MHz being the basic chip rate and also the rate at which the system encodes and spreads signals. The system operates at a chip rate that is a multiple of the basic chip rate, with the multiple being 3, 6, 9 or 12. An increase in the chip rate allows for higher data capacities and more efficient communications. The system can choose from a chip rate of 3.6864 MHz, or 1/3 of 3.6864 MHz (1.2288 MHz). Refer to Column

1, lines 53-57; Column 3, lines 11-48; Column 5, lines 32-63; and Column 10, lines 18-55. Chip rates can apply to both uplink and downlink directions. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include a receiver coupled to the signal processor, the receiver operable to receive a second spread data stream from the air interface which has been transmitted at an operating uplink chip rate selected from one of the at least two chip rates, wherein the first of the chip rates is equal to a fraction, n/p, of the second of the chip rates, where n/p is selected from ½, 2/5, 1/3, ¼, and 1/5. One would be motivated to do so in order to for the system to choose a higher chip rate to in case it needs to support higher data capacities, or a lower chip rate to save resources.

Referring to claim 25, refer to the rejection of claims 4, 14, 32 and 43. Chip rates can apply to both uplink and downlink directions.

7. Claims 10, 20, 38 and 49 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,923,651 to Struhsaker in view of U.S. Patent No. 6,320,851 to Kim et al, and in further view of U.S. Patent No. 6,539,047 to Moon.

Struhsaker and Kim et al do not disclose that the signal processor is further operable to generate a synchronization signal at the selected operating downlink chip rate, and then transmitter further operative to transmit the synchronization signal.

Moon discloses in Figure 1 a transmitter with a sync channel generator 120 that encodes an input sync channel signal and multiplies the encoded sync channel signal by a specific Walsh code 124 and then by a PN sequence 125. The resulting 80ms sync channel is used for system synchronization, all of which is performed at a chip

rate of 1.2288 Mcps. Refer to Column 1, lines 39-59; Column 2, line 64 to Column 3, line 8; and Column 3, lines 34-67. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to include that the signal processor is further operable to generate a synchronization signal at the selected operating downlink chip rate, and then transmitter further operative to transit the synchronization signal. One would be motivated to do so for the mobile station to acquire synchronization with the base station at the chip rate.

Allowable Subject Matter

8. Claims 5-9, 15-19, 26-28, 33-37, 44-48 and 50-52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christine Ng whose telephone number is (571) 272-3124. The examiner can normally be reached on M-F; 8:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

C. Ng
October 28, 2005

RICKY NGO
PRIMARY EXAMINER
11/10/05